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MONTHLY REPORT

16 October - 15 November 1955

PLANT ENGINEERING BRANCH
ENGINEERING DIVISION

As mentioned in the previous monthly report the project numbering system for PEB has been overhauled and is placed into effect with this report. The old project number is placed after the project title in parentheses for cross reference. Hereafter projects will be identified by only the new numbers.

1. PROJECTS AND ACTIVITIES

E-5001 VIKING POWER AMPLIFIER

No change in status.

E-5005 FASCIMILE FEASIBILITY (E-5632)

Plans have been made to conduct tests on or about 1 December if work load permits. All necessary equipment is now on hand and only need to be interconnected, but this will require considerable time to connect and run distortion checks before Cyfax test can be conducted.

E-5009 PORTABLE RECORDING STUDIO

Specifications and drawings for construction of several portable package recording studios similar to [REDACTED] are now complete and ready to be submitted to the Office of Logistics for bids.

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E-5014 NUMBERING ONE-TIME PAD MACHINE

A numbering one-time pad maze unit designed in such a way that it could be interchanged with a literal one-time pad maze unit thereby enabling the same machine to be used for both types of operation, has been completed and successfully tested. Drawing and diagrams have been completed for a combination literal and numbering maze unit.

E-5015 AFSAY-D801 VOICE SECRECY EQUIPMENT

Two (2) AFSAY-D801 Voice Secrecy Equipments were delivered by the National Security Agency during this report period. A private line #8096 was installed between Room 1081, Alcott Hall and Room 1C-50,

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Quarters Eye, Director of Logistics; also, a Voice Secrecy Unit on 14 November. To date, AFSAY-D801 Voice Secrecy Equipments are installed as follows:

- a. Room 124, East Building, (DDS)
- b. Room 1039, Alcott Hall, (Comptroller)
- c. Room 1810, Alcott Hall, (Chief, OC-E)
- d. Room 1C-50, Quarters Eye, (Director of Logistics)
- e. Room 2030, Eye Building, (Director of Communications)
- f. Room 1981, Alcott Hall, (Maintenance)

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25X1A

On 9 November Messrs. [REDACTED] of the National Security Agency visited the [REDACTED] to discuss various troubles which had been encountered in the AFSAY-D801 equipment. A memorandum is now being prepared by this Section to be forwarded to NSA listing unusual troubles encountered in this equipment.

No further progress has been made on the refurbishing of room 1013, Eye Building (new 801 switchboard room). It is estimated that the refurbishing of this room will be completed in two to three weeks.

E-5016 DD/P DOCUMENT LOCATOR SYSTEM

On 1 November a meeting was held in the [REDACTED] Shop, for 25X1A the purpose of demonstrating a transmitter distributor which had been modified to transmit intelligence which has been perforated on the edge of a card similar to an IBM card. Present at this demonstration were the following:

- ok a. [REDACTED] or, Office of Communications
 b. [REDACTED] Chief, Engineering Division
 c. [REDACTED]
 d. [REDACTED] /P
 e. [REDACTED] C-E/R&D
 f. [REDACTED] - OC-E/PEB
 g. [REDACTED] E/PEB, [REDACTED]

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25X1A

Although the modified transmitter distributor operated satisfactorily, it was agreed that considerable work had yet to be done before this type of operation could be adopted for the document locator system. Subsequent discussions between [REDACTED] of the [REDACTED] have revealed that there is a good possibility that card transmission will be abandoned in favor of standard tape transmission using a heavy duty plastic tape. A Reperforator-Transmitter-Distributor Set was installed in Room 1301, Temporary "I" Building and will be used by [REDACTED] to prepare tapes which will be used in IBM equipment which converts tapes to cards.

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E-5017 LITERAL ONE TIME PAD MACHINE

During the period covered by this report, two (2) literal one-time pad machines were completed and installed in the Headquarters Signal Center. A spare maze unit to be used with this equipment has also been completed.

E-5020 MODIFICATION WORK ORDERS

Five (5) MWO's are now being processed, and will shortly be ready for distribution. These include two (2) for the Motorola VHF/MWX link equipment, (receiver antenna input and preamplifier modifications), one (1) for the RT-4 transmitter, (blower), one (1) for the 51J-2 and 51J-3 receiver (mechanical filter kit), and one (1) for the Motorola Microwave equipments (voice terminal unit).

This procurement of parts for the cardholders with the exception of the mounting screws, has been completed, and distribution of the cardholder assemblies should be under way soon.

Initial steps are being taken to have all equipment in the American area modified, as necessary, in accordance with the Modification Work Order program. This will include units now in stock.

The [REDACTED] is preparing, in coordination with RSS, an Engineering Technical Bulletin which deals with plastic pipe, its uses and limitations. It should be ready for publication and issuance to the field for general information by the next reporting period.

E-5030 ANTENNA STUDY

No change in status.

E-5040 TVI STUDY

Consultation was held with a [REDACTED] Engineer and the [REDACTED] Engineer on TVI from the 231D-20 transmitters [REDACTED]. The [REDACTED] Engineer was taken to [REDACTED] transmitting site to get a first-hand view of the situation. He remarked that he had never encountered such extensive harmonic radiation from this type transmitter before. His written report, when received, will be forwarded to those concerned.

E-5060 STOCKPILE

A revised 10-position Bill of Materials was sent to OC-O&T. A trip was made to the Marine Base at Quantico, Virginia for the purpose of inspecting shelters which have possible application to the stockpile program. A trip report dated 14 November 1955 has been prepared and is being circulated to all interested parties. In addition, one copy without attachments is included in this report.

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25X1A6b
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E-5090 TINY TOT

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The thirteen (13) XD-91-GL duplex transmitter distributors which were delivered to the [REDACTED] during the last reporting period and six (6) units installed in the Headquarters Signal Center have been modified for Tiny Tot operation. Two (2) Off-Line Tradon Units are now in the process of being converted for Tiny Tot operation. Seven (7) Tiny Tot keyboard conversion kits were shipped [REDACTED] Work has begun on the development of an On-Line Tiny Tot. The following men have been assigned TDY to the [REDACTED] to work on the Tiny Tot program:

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- a. [REDACTED] EOD - 26 October 1955
- b. [REDACTED] - 28 October 1955

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E-5109 CLASS AM MOBILE STATION [REDACTED] (E-5110)

All equipment necessary for the renovation of [REDACTED] with the exception of the operating desks and RT's have been shipped. [REDACTED] has been alerted for their arrival at [REDACTED] on 19 November.

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E-5130 AIR TRANSPORTABLE MOBILE STATION CLASS CM (2ST)

No change in status.

E-5170 CLASS "B" MOBILE UNIT (6ST)

During the period covered by this report, the teletype equipment in one receiver ran was inspected and modified. Four (4) 6ST's have been completely checked out, headquarters modifications made, and completely packed awaiting shipment from [REDACTED] warehouse. The delay in shipping is due to difficulty in [REDACTED] for the tractors and vans. Unit number 5 is partially completed and work progress is satisfactory.

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25X1C

E-5201 SECURITY OFFICE MOBILE TRANSCEIVER MAINTENANCE

Routine maintenance was performed on all sets delivered with the exception of the last two (2). These were held over for one week because our maintenance personnel were being utilized for higher priority projects.

E-5222 TELETYPE AND CRYPTOGRAPHIC MAINTENANCE

Preventative maintenance of teletypewriter and associated cyptographic equipment was performed on four hundred sixty-two (462) sets as per schedule. The equipment located in [REDACTED]

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[REDACTED] Contract Branch Offices is included in this schedule. We also cleared two hundred eighteen (218) troubles as reported to the [REDACTED]

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25X1A

[REDACTED] and processed one (1) teletype spare part requisitions (60 items) for shipment to the field. The following equipment was

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returned to the [REDACTED] for overhaul and reconditioning:

- a. 7 ea. M-15 typing units
- b. 6 ea. M-14 typing units
- c. 3 ea. Model 14 transmitter distributors
- d. 3 ea. Receiving transmitter distributors
- e. 10 ea. Perforator-transmitters

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E-5230 [REDACTED]

All the funds have been allocated for the construction of an addition to the microwave building. The drawings, plans, and specifications have been forwarded [REDACTED] and will go out on bid. The bids are due in by 22 November.

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E-5250 WASHINGTON DISASTER PLAN

The following microwave voice circuits have been terminated in the microwave switchboard:

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- a. [REDACTED]
- b. [REDACTED]
- c. [REDACTED]
- d. [REDACTED] - 1 each
- e. [REDACTED] 1 each

The following microwave teletype circuits were installed in compliance with a memorandum from the Operations and Training Division:

- a. One (1) full duplex circuits from building [REDACTED] to the FBI relocation Site.

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25X1A6d

- b. Five (5) full duplex circuits from building [REDACTED]

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25X1A6a

25X1A6a

As soon as testing of the above circuits has been completed, a memorandum will be forwarded to the Operations and Training Division advising that the circuits have been installed.

E-5250.01 WASHINGTON DISASTER PLAN

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E-5251 DISASTER REGISTRATION POINT COMMUNICATION FACILITY

Revised operational requirements call for revision of the present voice communication equipment and frequencies to insure reliable communications

between Room 2, Administration Building, [REDACTED] and the newly assigned CIA Registration points.

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Profile charts have been prepared for the paths/area concerned, and it is planned to utilize VHF equipment and remove the presently installed McKay equipment which had been operating on a 4 MC frequency.

The presently installed VHF Motor Pool Dispatch equipment could be utilized on the Security Office frequency of 172.575 MC. A repeater station might be required at Tyson's Corner for reliable service from the Chevrolet trucks to the Base Station, Room 2 [REDACTED], however the validity of this requirement will be checked by making field strength measurements in the near future.

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E-5280 [REDACTED] US. BASE RADIO STATION

[REDACTED] is conducting classes at [REDACTED] for maintenance personnel which started on the 14 November and will continue thru to 25 November. These classes will enable operating personnel to perform complete maintenance on the engines and powerhouses at these stations.

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E-5305 NORTH AFRICAN RADIOPHONE NET

A report on this project was forwarded to OC-O&T last month. Since nothing further has developed on this project, this will be the last report unless the project becomes active again.

E-5310 [REDACTED]

The shipment of the Frueharf tractor and trailer to this station has been cancelled.

Is now in the
During this reporting period, the station sent in a request to modify the proposed air conditioning system to include an area formerly occupied as a kitchen and dining hall, but now proposed as an office for the medic. The field was notified that changes could and would be made, but that changes required a proposed floor plan first. To date, no floor plan has come in, although the equipment has been trans-shipped from the New York docks back to the manufacturer. The proposed changes will cost an estimated \$2000.00 and delay the job at least sixty (60) to ninety (90) days. However, it is still felt that the installation can be completed prior to the arrival of the warmer season.

VHF BIDS

The bids received from several manufactures to supply seven (7) VHF mobile stations and two (2) base stations for emergency use at this station are being reviewed to determine the low bidder [REDACTED]

[REDACTED] It is anticipated that delivery and shipment will be made by the end of the next reporting period.

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E-5320 [REDACTED]

Routine engineering support continued during this month.

25X1A6b

E-5340 [REDACTED]

Routine engineering support continued during this month.

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E-5360 [REDACTED]

At the request of this station, we are preparing drawings for the construction of masonry shelters to be built around the outdoor Microwave housings. These drawings could be completed by 1 December.

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E-5380 [REDACTED]

This project activity has ceased with a "stop order" on construction and project planning held in abeyance pending formal cancellation of the project.

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E-5382 [REDACTED] BASE STATION [REDACTED]

Routine engineering support continued during this month.

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E-5390 [REDACTED]

Equipment being procured and shipped.

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E-5410.19 [REDACTED]

Based on sketches, received from the field, finished drawings have been prepared of the Transmitter/Receiver Station & Signal Center which include Site Plan, Floor Plans, and revised Antenna Plot. The present antenna installation must be removed as Army authorities have condemned the existing ninety (90) feet wooden poles. Present operational requirements can be met by replacing the poles with five (5) Blow-Knox towers which will accommodate five (5) transmitting and two (2) receiving antennas, exclusive of random long wire antennas which may be erected as requirements dictate.

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E-5426 [REDACTED]

Close liason is being maintained with [REDACTED] and RE&CD in an effort to coordinate building revisions/changes and to allow the architectural firm concerned [REDACTED] the time required to finalize project drawings.

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25X1A6b

E-5441 [REDACTED]

Plans for the air conditioning and ventilation system for this station has revealed that a central system should be employed which will cost approximately \$18,600.00. A study is being prepared for DDS requesting approval of this project.

25X1A9a [REDACTED] indicated that the antenna switching project was really not
25X1A6b necessary [REDACTED] and accordingly, we are discontinuing the project.

25X1A2d1 E-5442 [REDACTED]

25X1C8a The Bill of Materials for this project was completed and submitted to
OC-O&T. It consists of equipment necessary for base, sub-base, and out
stations for the [REDACTED] Communication system.

E-5620 MEDIUM POWER TRANSMITTER STUDY

No change in status.

E-5631 LIGHT WEIGHT 3-WIRE FOLDED DIPOLE

No change in status.

E-5671 UHF LINK EQUIPMENT

Routine engineering support continued during this month.

E-5680 PMO

25X1A5a1 [REDACTED] has supplied the project engineer with two (2) small matching trans-
formers to match the co-ax low impedance PMO output to the high impedance
transmitter oscillator input circuit. Tests will be made with each type
of standard transmitters used in our base stations to determine the
effectiveness of this transformer.

25X1A2d1 E-5720 [REDACTED]

Routine engineering support continued during this month.

25X1A

E-5730 [REDACTED] (E-5731)

No change in status.

25X1A2d1 E-5940 [REDACTED]

Routine engineering support continued during this month.

WASHINGTON AREA MAINTENANCE

Routine maintenance was performed on all area diesel and gasoline driven
generators during the reporting period. At the present, generator "ON"
lights have been installed at "I" building, and Quarters Eye. Other
locations will be so equipped as time permits. The estimates of cost
have not been submitted by GSA on the isolation-switch installation to
date.

MISCELLANEOUS

The cost estimates are being prepared on the proposal to install a 21 MC cubical Quad antenna for "I" building.

MODIFICATION OF MICROWAVE VTU P-6036

Two (2) voice terminals were modified and tested on a jig simulating a microwave path working into a Kellogg switchboard. The units performed as expected, and a modification work order has been written up on this project.

URT-11/RT-1B CHOKE/FILAMENT TRANSFORMER PROBLEM

In an effort to clear up the discrepancies between the drawing specifications for these parts and the ratings of the actual parts, the manufacturer [REDACTED] has been consulted. On [REDACTED] request, R&D furnished a choke and transformer to that firm; these parts are to be sent to the transformer company for determination of whether there was originally an error in making the units or if their ratings are below those in the specifications. Additional effort is now being exerted to expedite action on this problem.

Many discussions have been held with the Monitoring Division, FCC and all available data, modifications, etc., has been secured from them. In addition trips have been made to the Monitoring Station at Laurel, Maryland and Allegan, Michigan, for the purpose of examining and operating the rotatable [REDACTED] system. FCC field engineers were also queried as to installation and maintenance procedures on this equipment. It is anticipated that [REDACTED] will leave [REDACTED] near the end of December. (At the time of writing of the report, his departure date has been extended to 27 December.)

2. ADMINISTRATIVE

TTY

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EOD

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[REDACTED] 9 November for a 20 day evaluation period.

RESGINATIONS

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[REDACTED] - effective, 4 November

TRANSFERS

(Not applicable)

OTHER

(Not applicable)

[REDACTED]
Chief, Plant Engineering Branch

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